

Claims

- [c1] A management apparatus for managing a plurality of interconnecting devices which interconnects communication, comprising:
· a command storage unit for storing one or more execution procedures, which correspond to a common command to the interconnecting devices and process the command for the respective interconnecting devices; and
· an execution unit connecting to said command storage unit for executing the command for one of the plurality of interconnecting devices, by fetching the execution procedure corresponding to the command for said one of the interconnecting devices from said command storage unit, and for communicating with said one of the interconnecting devices in accordance with the execution procedure.
- [c2] A management apparatus as claimed in claim 1, wherein said execution unit establishes VLAN to said one of the interconnecting devices, by executing the command for said one of the interconnecting devices.
- [c3] A management apparatus as claimed in claim 2, wherein said execution unit either creates the VLAN to said one of the interconnecting devices or deletes the VLAN from said one of the interconnecting devices, by executing the command for said one of the interconnecting devices.
- [c4] A management apparatus as claimed in claim 2, wherein said execution unit either adds a communication apparatus to the VLAN set to said one of the interconnecting devices or deletes a communication apparatus from the VLAN set to said one of the interconnecting devices, by executing the command for said one of the interconnecting devices.
- [c5] A management apparatus as claimed in claim 1, further comprising a fetch unit for fetching the execution procedure of said one of the interconnecting devices from said one of the interconnecting devices, and for storing the fetched execution procedure into said command storage unit.
- [c6] A management apparatus as claimed in claim 5, wherein said one of the interconnecting devices stores the execution procedure in MIB (Management

Information Base) of SNMP(Simple Network Management Protocol), and said fetch unit fetches the execution procedure from MIB of said one of the interconnecting devices using SNMP.

- [c7] A management apparatus as claimed in claim 1, wherein, in case where the execution procedure includes a procedure of fetching an address of an interconnecting management apparatus for managing said one of the interconnecting devices, said execution unit fetches the address of the interconnecting management apparatus from said one of the interconnecting devices, and said execution unit manages said one of the interconnecting devices through the interconnecting management apparatus, according to the execution procedure of the command, by communicating with the interconnecting management apparatus using the address.
- [c8] An interconnecting device for interconnecting communication in a network, the interconnecting device connecting to a management apparatus to manage the interconnecting device and generating a fetch request, the interconnecting device comprising:
a storage unit for storing an execution procedure which corresponds to a command executed by the management apparatus and processes the command;
a receiver connecting to said storage unit for receiving from the management apparatus the fetch request for fetching the execution procedure;
a transmitter connecting to said storage unit and to the management apparatus for fetching the execution procedure from the storage unit which procedure is specified by the fetch request, and for transmitting the fetched execution procedure to the management apparatus; and
a setting unit connecting to said receiver and to said transmitter for setting the interconnecting device according to a process request sent to the interconnecting device by the management apparatus, based on the execution procedure, when the management apparatus executes the command based on the execution procedure.
- [c9] An interconnecting device as claimed in claim 8, wherein said storage unit

stores the execution procedure in MIB of SNMP,
said receiver receives the fetch request as a message format based on SNMP,
and
said transmitter transmits the execution procedure in the message format
based on SNMP.

- [c10] An interconnecting device as claimed in claim 8, wherein the execution procedure includes steps of:
making the management apparatus fetch an address of an interconnecting management apparatus which manages said interconnecting device; and
making the management apparatus manage said interconnecting device via the interconnecting management apparatus of the interconnecting device, by communicating with the interconnecting management apparatus.
- [c11] A communication system comprising:
a plurality of interconnecting devices for interconnecting communication; and
a management apparatus connecting to and managing said plurality of interconnecting devices, wherein
said management apparatus includes
a command storage unit for storing one or more execution procedures, which corresponds to a common command for managing said interconnecting devices and process the command for said respective interconnecting devices,
a fetch unit for fetching the execution procedure of one of said interconnecting devices from said one of said interconnecting devices, and for storing the fetched execution procedure into said command storage unit, and
an execution unit for executing the command for said one of said interconnecting devices, by fetching the execution procedure corresponding to the command for said one of said interconnecting devices from said command storage unit, and by communicating with said one of said interconnecting devices in accordance with the execution procedure; and
said one of the interconnecting devices includes
a storage unit for storing the execution procedure, which corresponds to the command executed by said management apparatus managing said one of said interconnecting devices, and processes the command,

a receiver for receiving a fetch request to fetch the execution procedure from said management apparatus,
a transmitter for fetching the execution procedure specified by the fetch request from said storage unit, and for transmitting the fetched execution procedure to said management apparatus; and
a setting unit for setting said one of said interconnecting devices according to a process request sent to said one of said interconnecting devices by said management apparatus based on the execution procedure when said execution unit of said management apparatus executes the command based on the execution procedure.

- [c12] A computer readable medium recording a program for a management apparatus to manage a plurality of interconnecting devices, which interconnect communication, wherein said program makes said management apparatus be operated as:
a command storage unit for storing one or more execution procedures, which correspond to a common command for managing the interconnecting devices and process the command for the respective interconnecting devices; and
an execution unit for executing the command for one of the interconnecting devices, by fetching the execution procedure corresponding to the command for said one of the interconnecting devices from said command storage unit, and by communicating with said one of the interconnecting devices in accordance with the execution procedure.
- [c13] A management method of managing a plurality of interconnecting devices for interconnecting communication, comprising steps of:
storing one or more execution procedures, which corresponds to a common command for managing the interconnecting devices and process the command for the respective interconnecting devices; and
executing the command to one of the interconnecting devices, by fetching the execution procedure corresponding to the command for said one of the interconnecting devices from said command storage unit, and by communicating with said one of the interconnecting devices in accordance with the execution procedure.

- [c14] A management apparatus for managing a plurality of interconnecting devices which interconnects communication, comprising:
a communication unit connecting to the interconnecting devices;
an issue unit connecting to said communication unit and issuing a common command which is common to the plurality of the interconnecting devices;
a command storage unit which stores one or more execution procedures, which correspond to the common command and process the command for the respective interconnecting devices; and
an execution unit connecting to said issue unit, said communication unit and said command storage unit, said execution unit executing the command for one of the plurality of interconnecting devices by fetching the execution procedure corresponding to the command for said one of the interconnecting devices stored in said command storage unit, and said execution unit communicating with said one of the interconnecting devices through said communication unit in accordance with the execution procedure.